HeartOn AED Event Review Software
User Guide

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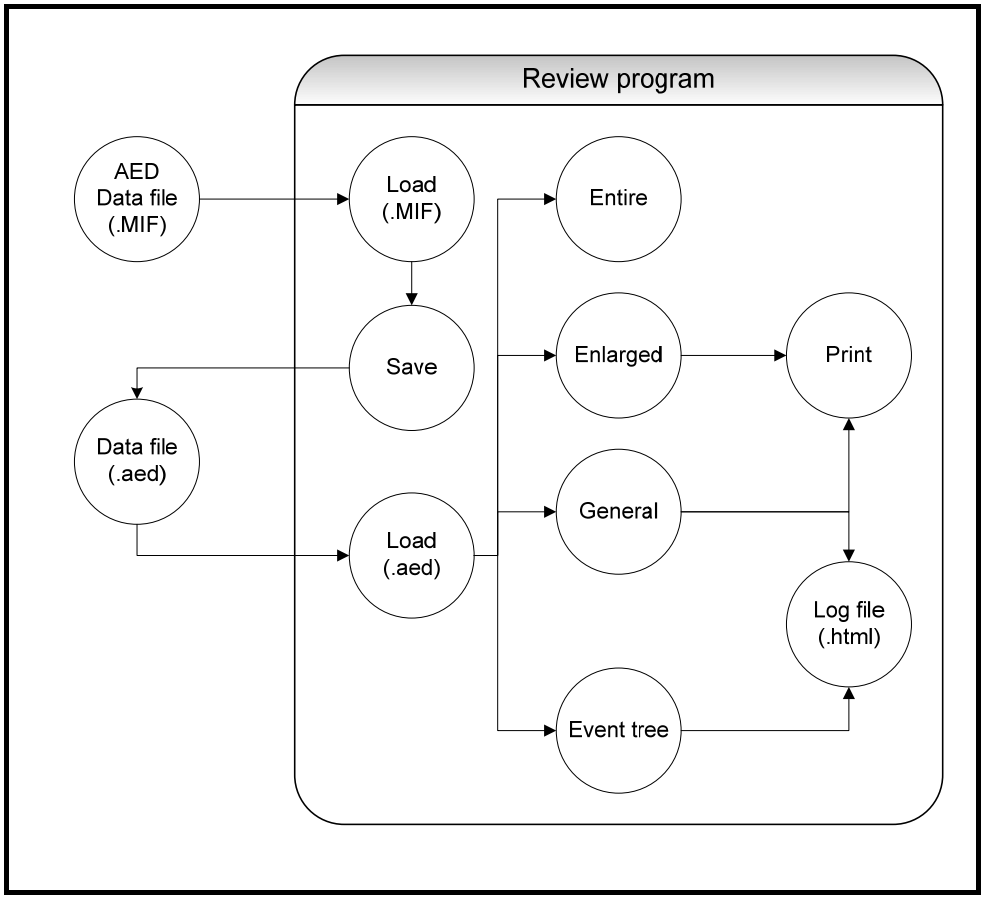
1. Overview

A. Configuration



The descriptions for each component and data flow diagram are provided to explain for composition of the HeartOn AED Event Review Software.

i. Component

(1) AED data file(.MIF)
The five files saved in SD-card including vital signs information of patient and operating condition of the AED.

(2) Data file(.aed)
The filed saved in Computer with additional information from the data file of the AED.

(3) Load(.MIF)
The component loading the data file of the AED to display on the HeartOn AED Event Review Software.

(4) Save
The component saving the data file from the AED with additional information.

(5) Load(.aed)
The component loading the file only for the HeartOn AED Event Review Software.

(6) Entire
The component to show the entire ECG wave flow.

(7) Enlarged
The component to show the ECG wave and the detailed information for each event.

(8) General
The component to show information according to each case and to input any additional information.

(9) Event tree
The component to show events for cases arranged by the date or unit ID.
(10) Print
The component to print the screen shown in the enlarged.
(11) Log file(.html)
The component to show the report on the web browser.

ii. Data flow(by function)

The HeartOn AED Event Review Software consists of four major functions.

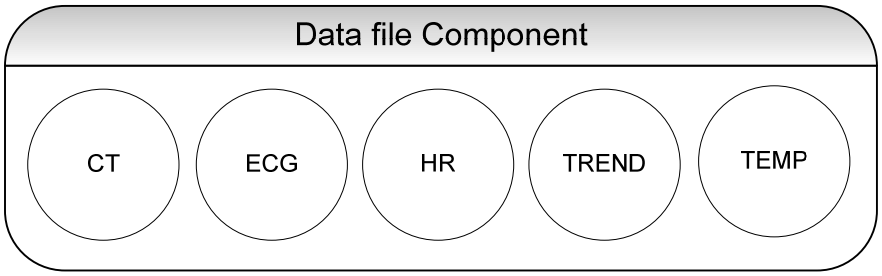
(1) Load
The HeartOn AED Event Review Software has two methods to load the data file. The first method is to load five files saved in the AED according to applicable protocols. These files include each data (CT data, ECG data, HR data, Trend data and Temp data). Second method is to load the data from the file (.aed) only for the HeartOn AED Event Review Software according to the applicable protocol. The file only for the HeartOn AED Event Review Software includes all the five data saved in the AED and additional data as well.

(2) Store
The HeartOn AED Event Review Software saves the five files saved in the AED and additional data as its exclusive file format. When the additional data is changed, it is saved again as the file only for the HeartOn AED Event Review Software.

(3) View
The HeartOn AED Event Review Software provides four types of display. Open the saved file and send the data to each display, then arrange the data according to display properties. The first display is the tree view that shows several cases and these cases are arranged by its date or unit ID. The memo can be added by the annotation function. The second display is the general view which the basic data and information for user or patient can be added in. The third display is the entire ECG that shows entire ECG data flow for 2 minutes and 30 seconds. The fourth display is the enlarged ECG that shows ECG data and the event log at an interval of 2, 6 or 8 seconds. These data can be optionally printed.

(4) Print
The ECG data and the event log selected in the enlarged ECG can be printed. Additionally, the display based on the web browser is provided to print the event log and data added on the HeartOn AED Event Review Software only.

B. The files saved in the AED (AED data file)



The data saved in SD card of the AED consists of five files and its file extension is 'MIF'.

i. **CT**
It includes data to calculate the shock energy.

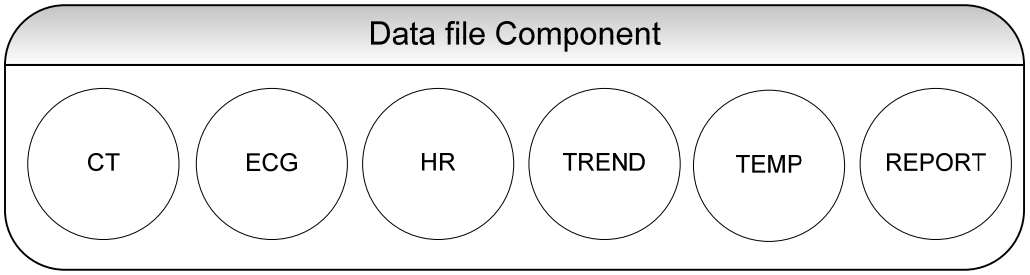
ii. **ECG**
It includes ECG data of 250 sample/sec.

iii. **HR**
It includes Heart Rate data measured during the ECG analysis.

iv. **TREND**
It includes events related to Pad, Shock and Body Impedance.

v. **TEMP**
It includes Temperature data around AED.

C. The files saved in the HeartOn AED Event Review Software (Reviewer data file)



The reviewer data file includes the AED data file and additional data from the HeartOn AED Event Review Software, and the file extension is '.aed'. The additional data appears in the report which includes the AED data file as well.

i. **AED data**
It includes the loading time from SD card for the file and the serial number of the unit.

ii. **Add Information**
It includes the information about the user and patient of AED and each case.

2. Installing HeartOn AED Event Review Software

The HeartOn AED Event Review Software is automatically installed when the installation CD is inserted into the CD driver of the computer.

NOTE: Before installing HeartOn AED Event Review Software, the enclosed lock key shall be put in the USB port.

NOTE: When the HeartOn AED Event Review Software is not automatically installed, search for 'HeartOn AED Event Review Software.exe' file from the installation CD's root directory and double click to start.

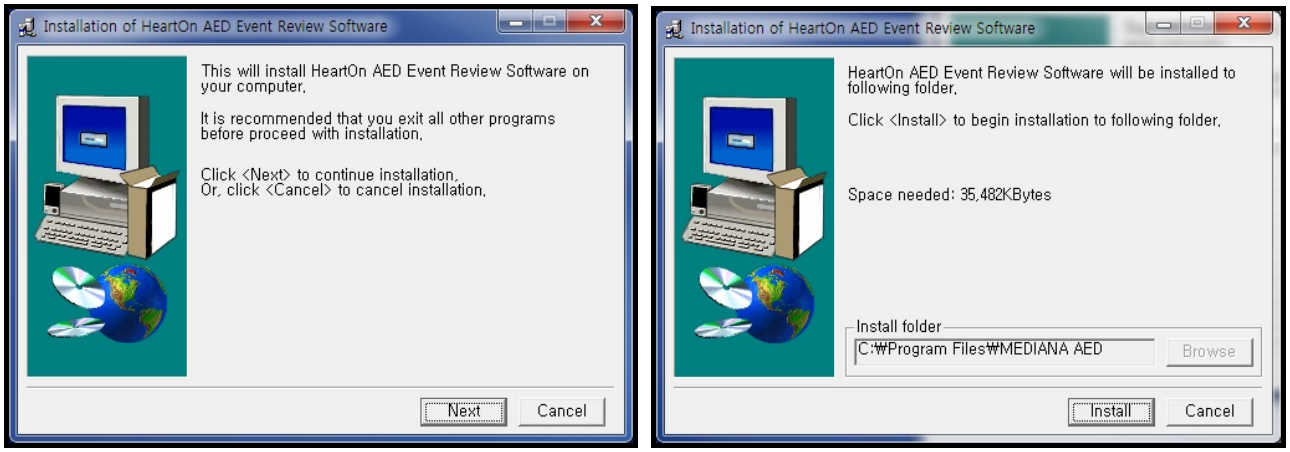

Installation of HeartOn AED Event Review Software
This will install HeartOn AED Event Review Software on your computer.
It is recommended that you exit all other programs before proceed with installation.
Click <Next> to continue installation.
Or, click <Cancel> to cancel installation.
Next
Cancel
Installation of HeartOn AED Event Review Software
HeartOn AED Event Review Software will be installed to following folder.
Click <Install> to begin installation to following folder.
Space needed: 35,482KBytes
Install folder
C:₩Program Files₩MEDIANA AED
Browse
Install
Cancel

Figure 1. Starting installation

.

3. Using the HeartOn AED Event Review Software and structure

A. Loading the 'MIF' file

Select the 'Open' menu to open the MIF file.

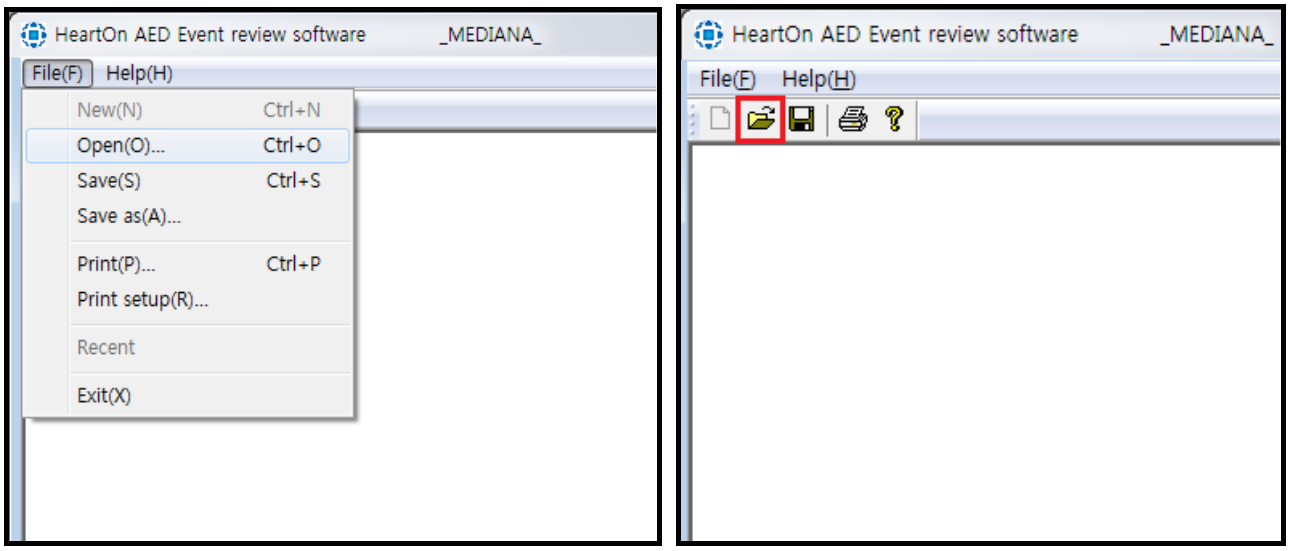


Figure 2. Selecting the 'Open' menu

When the 'Open' menu is selected, the below window appears.

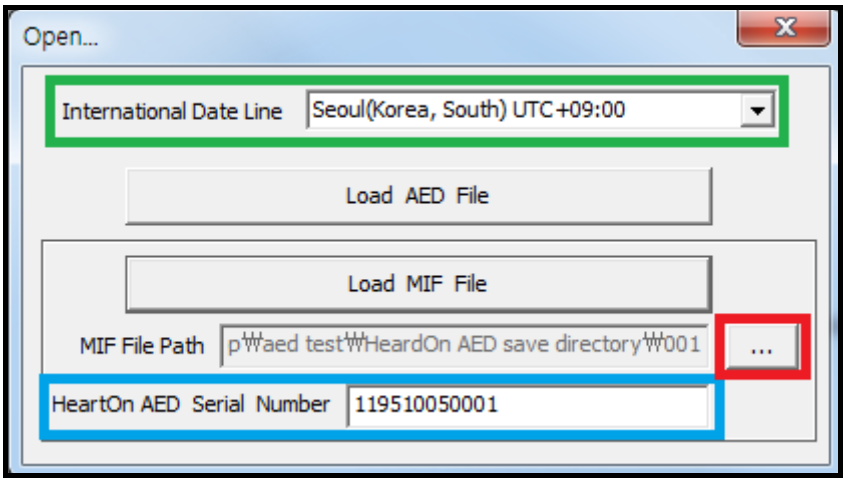


Figure 3. Selecting the type of file

i. Set International Date Line

When setting the time zone, the time of data loaded from the AED can be set to match the current local time.

Set the time zone by selecting International Date Line. The International Data Line contains the time zone for about 200 world wide cities. The time zone is shown in the following format:

City name(Country name) UTC +/- HH:MM

NOTE: The default International Date Line is the time that Windows uses.

ii. Load MIF File

Click MIF file path to load MIF file.
Enter the serial number indicated on the bottom of the AED into HeartOn AED Serial number box to identify the AED.

NOTE: The MIF File Path is to load the MIF file saved in SD card of the AED. Connect the SD card to the computer and move to the default directory. Then the ‘A15’ or ‘A10’ directory appears as shown in the below. The folders are created whenever AED is used and the relevant data are saved in each folder. The folder name mounts from 001. The five MIF files explained above exist in each folder. One file may be selected.

Select the MIF file, enter the serial number and click the ‘Load MIF File’ button to progress.

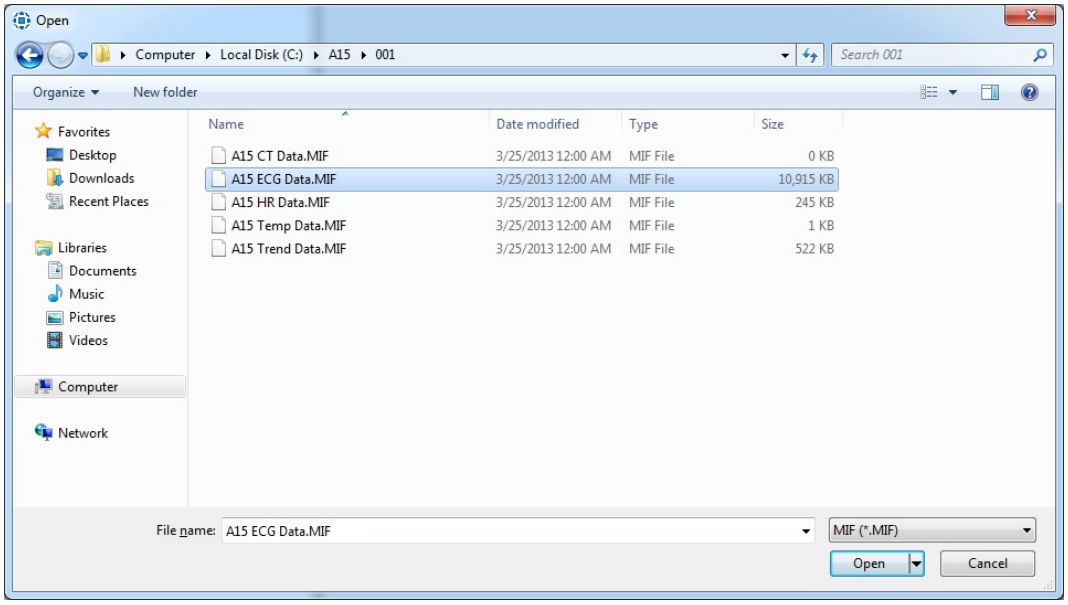


Figure 4. Selecting the MIF file

When the ‘Load MIF File’ is selected the window appears as shown in Figure 5. The path and file name may set in the below window to save the MIF file saved in the AED as ‘.aed’ file only for the HeartOn AED Event Review Software. The name is auto-defined or user-defined. When the setting is completed, click ‘Save’ button to progress.

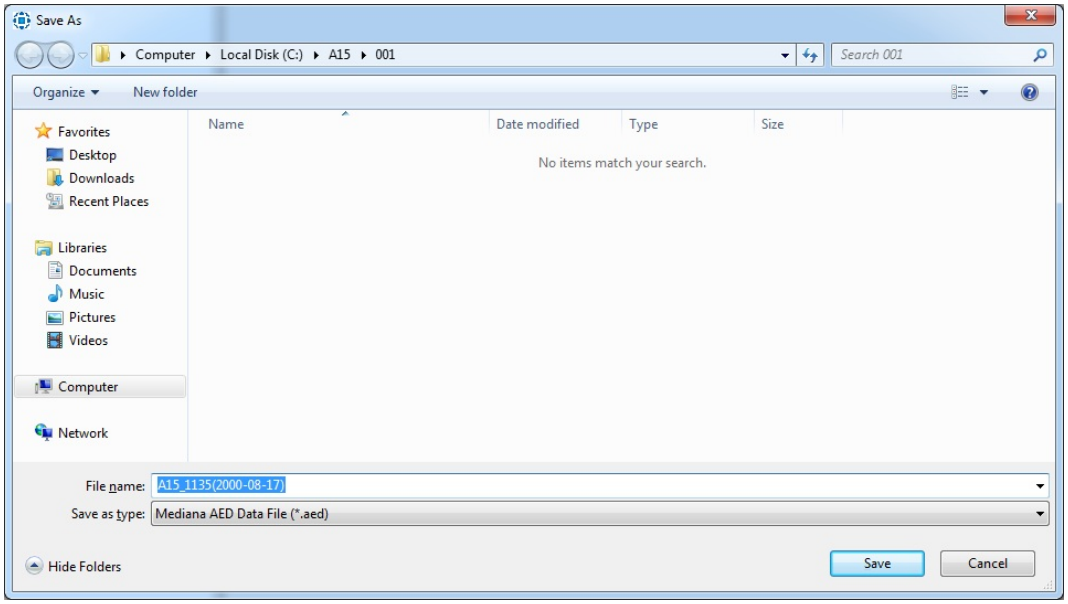


Figure 5. Selecting the directory to save the '.aed' file

When the saving procedure is completed, the MIF files are automatically deleted from the SD card. The notice window appears as shown in Figure 6.

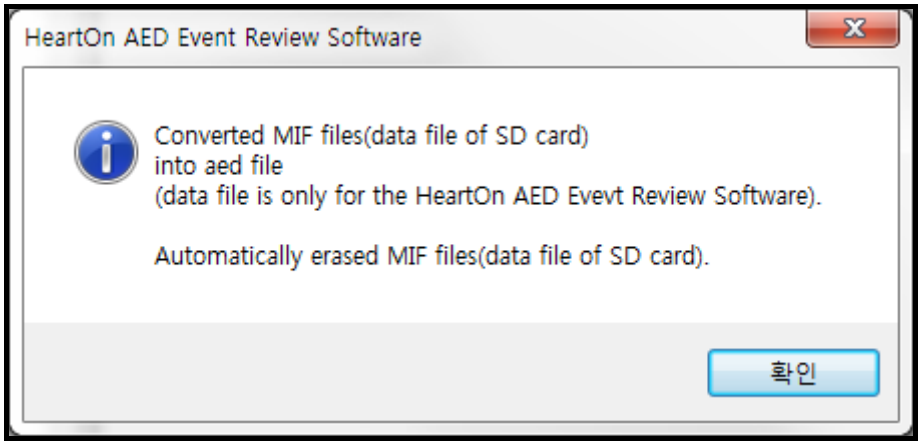

HeartOn AED Event Review Software
Converted MIF files(data file of SD card)
into aed file
(data file is only for the HeartOn AED Evevt Review Software).
Automatically erased MIF files(data file of SD card).
확인

Figure 6. Notice window for erasing MIF file

The below window appears to show all data when all procedures are completed.

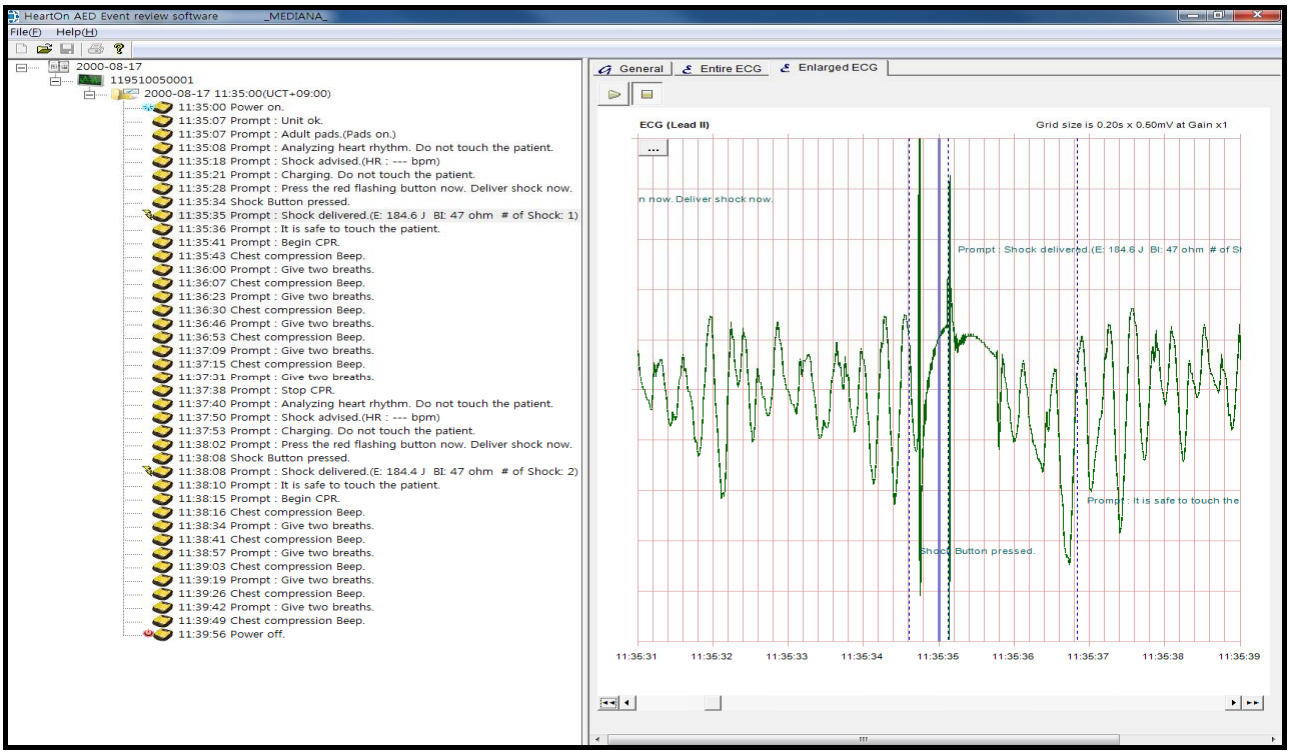

HeartOn AED Event review software _MEDIANA_
File(F) Help(H)
2000-08-17
119510050001
2000-08-17 11:35:00(UCT+09:00)
11:35:00 Power on.
11:35:07 Prompt : Unit ok.
11:35:07 Prompt : Adult pads.(Pads on.)
11:35:08 Prompt : Analyzing heart rhythm. Do not touch the patient.
11:35:18 Prompt : Shock advised.(HR : --- bpm)
11:35:21 Prompt : Charging. Do not touch the patient.
11:35:28 Prompt : Press the red flashing button now. Deliver shock now.
11:35:34 Shock Button pressed.
11:35:35 Prompt : Shock delivered.(E: 184.6 J BI: 47 ohm # of Shock: 1)
11:35:36 Prompt : It is safe to touch the patient.
11:35:41 Prompt : Begin CPR.
11:35:43 Chest compression Beep.
11:36:00 Prompt : Give two breaths.
11:36:07 Chest compression Beep.
11:36:23 Prompt : Give two breaths.
11:36:30 Chest compression Beep.
11:36:46 Prompt : Give two breaths.
11:36:53 Chest compression Beep.
11:37:09 Prompt : Give two breaths.
11:37:15 Chest compression Beep.
11:37:31 Prompt : Give two breaths.
11:37:38 Prompt : Stop CPR.
11:37:40 Prompt : Analyzing heart rhythm. Do not touch the patient.
11:37:50 Prompt : Shock advised.(HR : --- bpm)
11:37:53 Prompt : Charging. Do not touch the patient.
11:38:02 Prompt : Press the red flashing button now. Deliver shock now.
11:38:08 Shock Button pressed.
11:38:08 Prompt : Shock delivered.(E: 184.4 J BI: 47 ohm # of Shock: 2)
11:38:10 Prompt : It is safe to touch the patient.
11:38:15 Prompt : Begin CPR.
11:38:16 Chest compression Beep.
11:38:34 Prompt : Give two breaths.
11:38:41 Chest compression Beep.
11:38:57 Prompt : Give two breaths.
11:39:03 Chest compression Beep.
11:39:19 Prompt : Give two breaths.
11:39:26 Chest compression Beep.
11:39:42 Prompt : Give two breaths.
11:39:49 Chest compression Beep.
11:39:56 Power off.
General
Entire ECG
Enlarged ECG
ECG (Lead II)
Grid size is 0.20s x 0.50mV at Gain x1
11:35:31
11:35:32
11:35:33
11:35:34
11:35:35
11:35:36
11:35:37
11:35:38
11:35:39

Figure 7. Completion of the MIF file loading

B. Loading the '.aed' file

Select the 'Open' menu to open the '.aed' file.

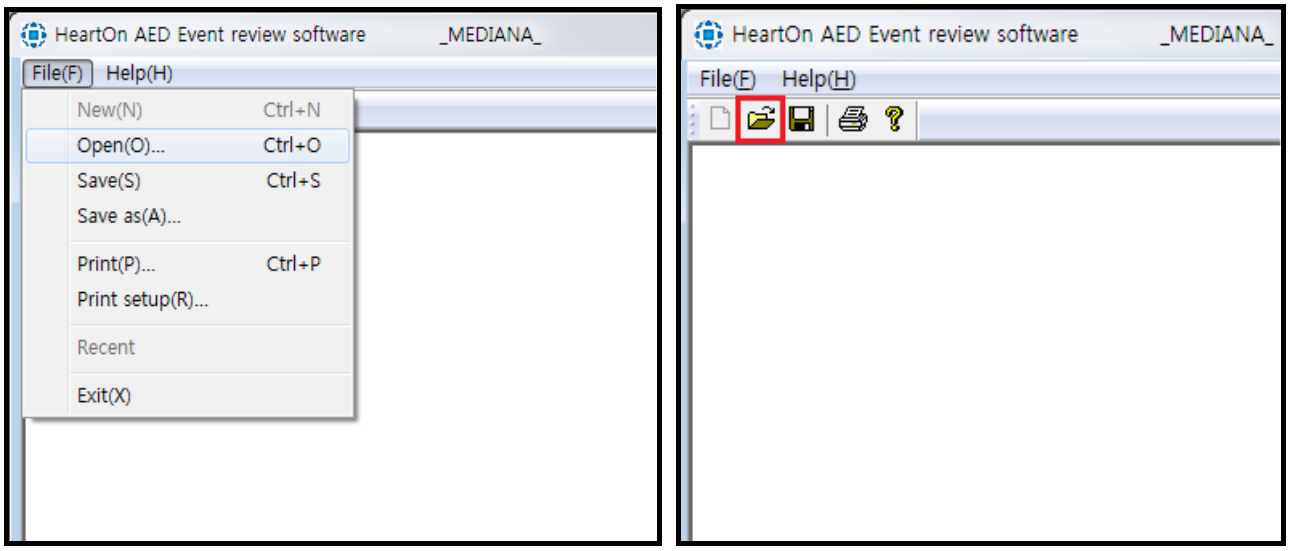


Figure 8. Selecting the 'Open' menu

NOTE: The '.aed' file only for HeartOn AED Event Review Software is to be directly converted from MIF file saved in the AED via HeartOn AED Event Review Software. Therefore, it needs the file management after saving al of '.aed' file. Note that it is impossible to restore the data when the '.aed' file is erased.

The below window appears when the 'Open' menu is selected.

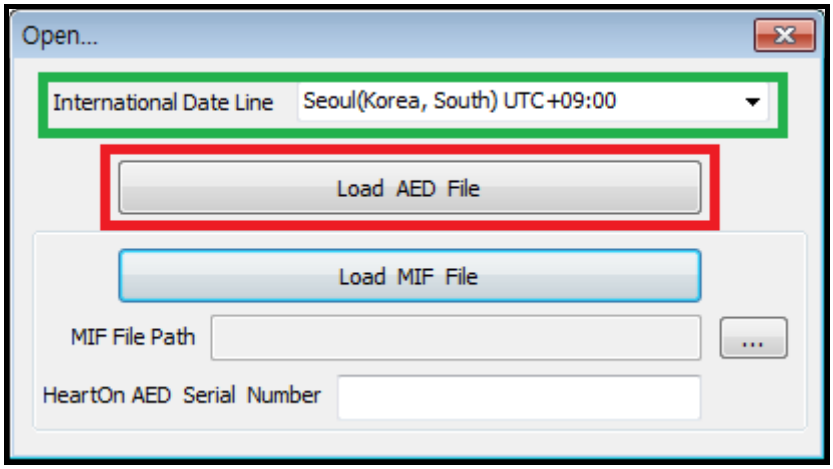


Figure 9. Selecting the type of file

i. Set International Date Line

Set the time zone by selecting International Date Line. The International Data Line contains the time zone for about 200 world wide cities. The time zone is shown in the following format:

City name(Country name) UTC +/- HH:MM

When setting the time zone, the time of '.aed' data is set to match the current local time.

NOTE: The default International Date Line is the time that Windows uses.

ii. Load AED File

The below window appears to select the '.aed' file when the 'Load AED File' button is selected.

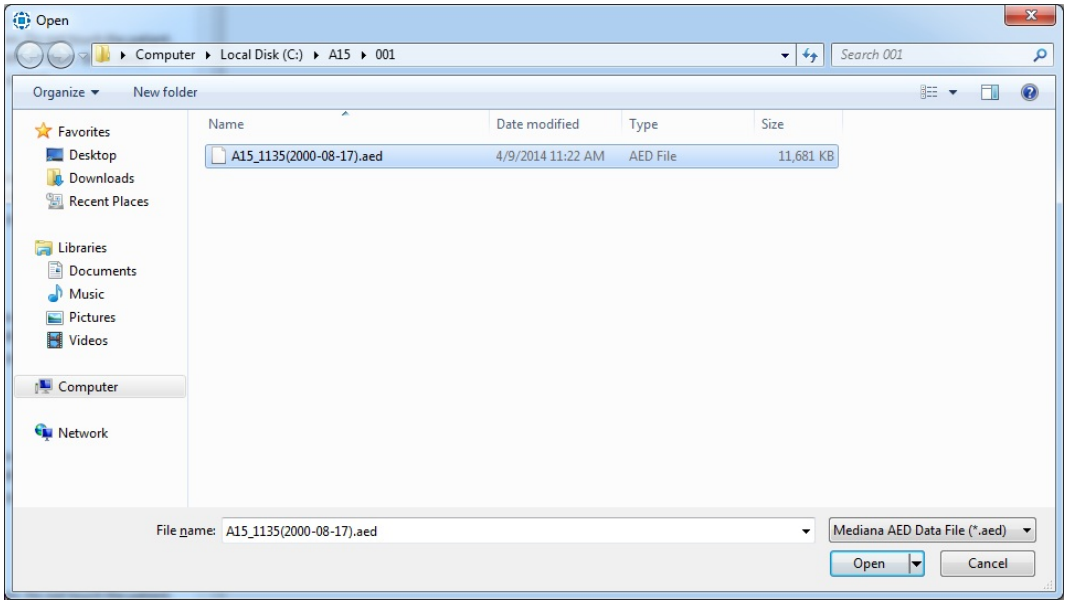
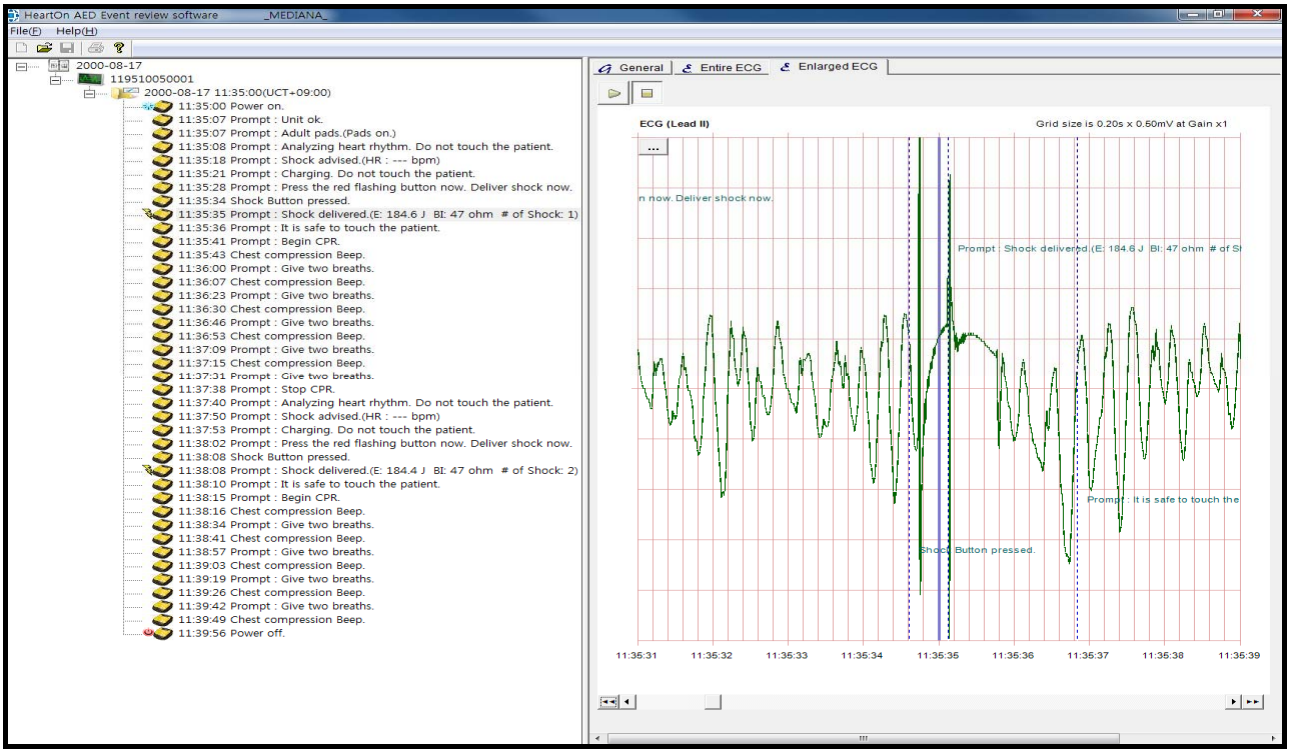


Figure 10. Selecting '.aed' file

The below window appears to show all data when all procedures are completed.


HeartOn AED Event review software _MEDIANA_
File(F) Help(H)
2000-08-17
119510050001
2000-08-17 11:35:00(UCT+09:00)
11:35:00 Power on.
11:35:07 Prompt : Unit ok.
11:35:07 Prompt : Adult pads.(Pads on.)
11:35:08 Prompt : Analyzing heart rhythm. Do not touch the patient.
11:35:18 Prompt : Shock advised.(HR : --- bpm)
11:35:21 Prompt : Charging. Do not touch the patient.
11:35:28 Prompt : Press the red flashing button now. Deliver shock now.
11:35:34 Shock Button pressed.
11:35:35 Prompt : Shock delivered.(E: 184.6 J BI: 47 ohm # of Shock: 1)
11:35:36 Prompt : It is safe to touch the patient.
11:35:41 Prompt : Begin CPR.
11:35:43 Chest compression Beep.
11:36:00 Prompt : Give two breaths.
11:36:07 Chest compression Beep.
11:36:23 Prompt : Give two breaths.
11:36:30 Chest compression Beep.
11:36:46 Prompt : Give two breaths.
11:36:53 Chest compression Beep.
11:37:09 Prompt : Give two breaths.
11:37:15 Chest compression Beep.
11:37:31 Prompt : Give two breaths.
11:37:38 Prompt : Stop CPR.
11:37:40 Prompt : Analyzing heart rhythm. Do not touch the patient.
11:37:50 Prompt : Shock advised.(HR : --- bpm)
11:37:53 Prompt : Charging. Do not touch the patient.
11:38:02 Prompt : Press the red flashing button now. Deliver shock now.
11:38:08 Shock Button pressed.
11:38:08 Prompt : Shock delivered.(E: 184.4 J BI: 47 ohm # of Shock: 2)
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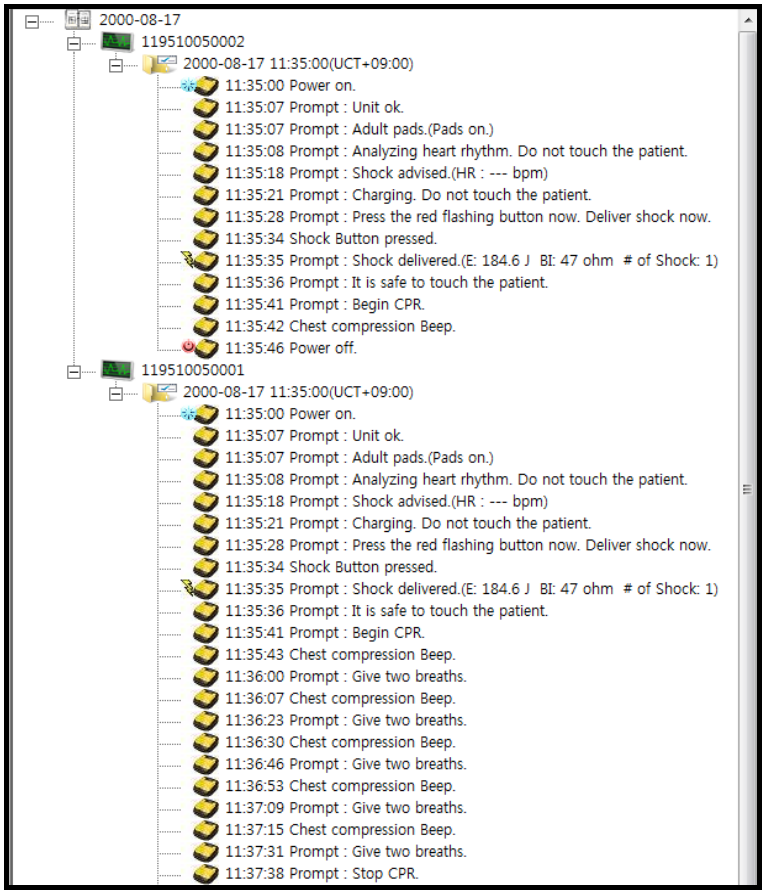
11:38:41 Chest compression Beep.
11:38:57 Prompt : Give two breaths.
11:39:03 Chest compression Beep.
11:39:19 Prompt : Give two breaths.
11:39:26 Chest compression Beep.
11:39:42 Prompt : Give two breaths.
11:39:49 Chest compression Beep.
11:39:56 Power off.
General
Entire ECG
Enlarged ECG
ECG (Lead II)
Grid size is 0.20s x 0.50mV at Gain x1
Prompt : Shock delivered.(E: 184.6 J BI: 47 ohm # of Sh
Prompt : It is safe to touch the
Shock Button pressed.
11:35:31
11:35:32
11:35:33
11:35:34
11:35:35
11:35:36
11:35:37
11:35:38
11:35:39

Figure 11. Completion of the '.aed' file loading

C. Event tree


2000-08-17
119510050002
2000-08-17 11:35:00(UCT+09:00)
11:35:00 Power on.
11:35:07 Prompt : Unit ok.
11:35:07 Prompt : Adult pads.(Pads on.)
11:35:08 Prompt : Analyzing heart rhythm. Do not touch the patient.
11:35:18 Prompt : Shock advised.(HR : --- bpm)
11:35:21 Prompt : Charging. Do not touch the patient.
11:35:28 Prompt : Press the red flashing button now. Deliver shock now.
11:35:34 Shock Button pressed.
11:35:35 Prompt : Shock delivered.(E: 184.6 J BI: 47 ohm # of Shock: 1)
11:35:36 Prompt : It is safe to touch the patient.
11:35:41 Prompt : Begin CPR.
11:35:42 Chest compression Beep.
11:35:46 Power off.
119510050001
2000-08-17 11:35:00(UCT+09:00)
11:35:00 Power on.
11:35:07 Prompt : Unit ok.
11:35:07 Prompt : Adult pads.(Pads on.)
11:35:08 Prompt : Analyzing heart rhythm. Do not touch the patient.
11:35:18 Prompt : Shock advised.(HR : --- bpm)
11:35:21 Prompt : Charging. Do not touch the patient.
11:35:28 Prompt : Press the red flashing button now. Deliver shock now.
11:35:34 Shock Button pressed.
11:35:35 Prompt : Shock delivered.(E: 184.6 J BI: 47 ohm # of Shock: 1)
11:35:36 Prompt : It is safe to touch the patient.
11:35:41 Prompt : Begin CPR.
11:35:43 Chest compression Beep.
11:36:00 Prompt : Give two breaths.
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11:36:30 Chest compression Beep.
11:36:46 Prompt : Give two breaths.
11:36:53 Chest compression Beep.
11:37:09 Prompt : Give two breaths.
11:37:15 Chest compression Beep.
11:37:31 Prompt : Give two breaths.
11:37:38 Prompt : Stop CPR.

Figure 12. Event tree window

The event tree is to show the event data saved in the AED.
One or more '.aed' file(s) are can be opened on the event tree and the events are opened or hided with a case unit.

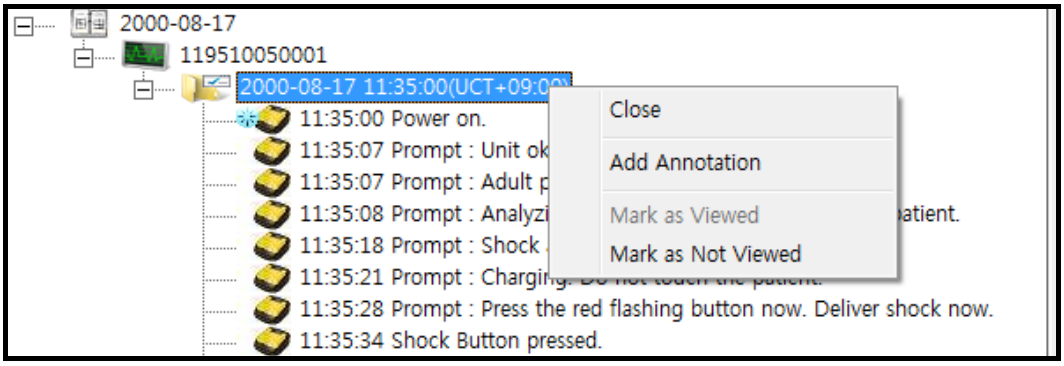


Figure 13. Case menu window

The menu for each case is available by right-clicking.

- Close: It is used to close the case.
- Add Annotation: It is used to add the annotation for the specified time.
- Mark as (Not) viewed: It is used to mark that each case is viewed or not.

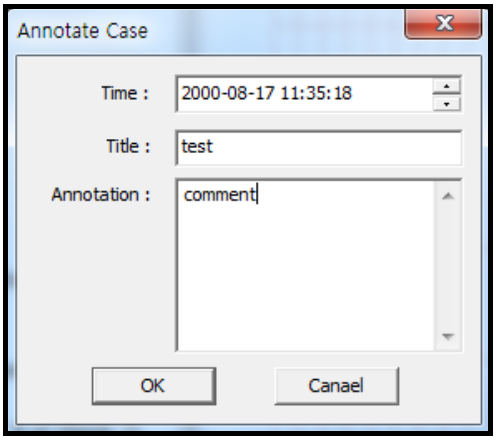


Figure 14. Adding the annotation – Event tree

The added annotation can be edited or deleted by right-clicking it.

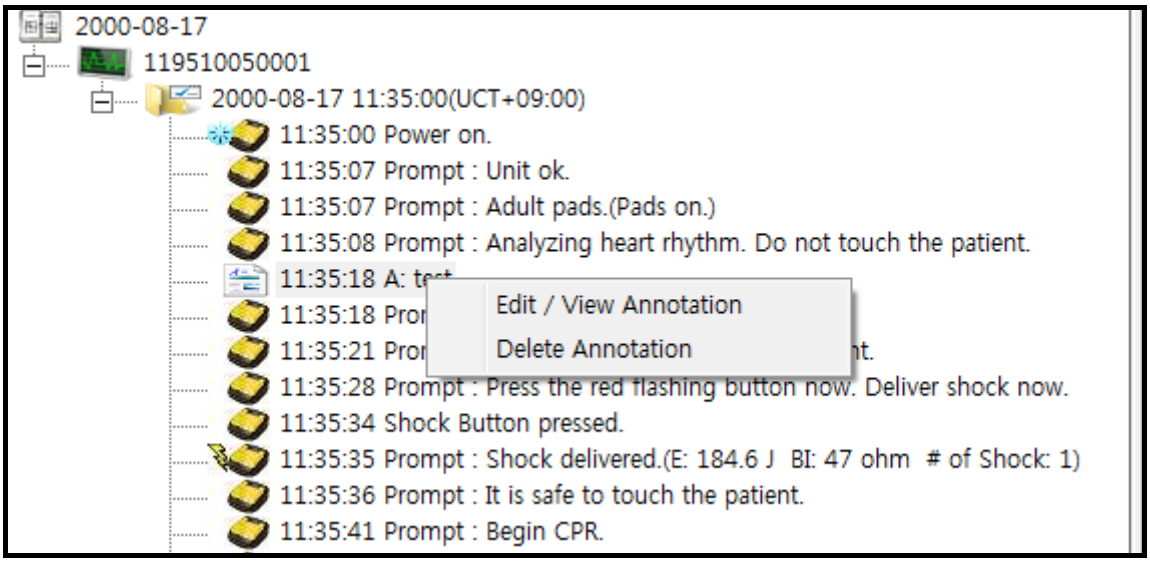

2000-08-17
119510050001
2000-08-17 11:35:00(UCT+09:00)
11:35:00 Power on.
11:35:07 Prompt : Unit ok.
11:35:07 Prompt : Adult pads.(Pads on.)
11:35:08 Prompt : Analyzing heart rhythm. Do not touch the patient.
11:35:18 A: test
Edit / View Annotation
Delete Annotation
11:35:28 Prompt : Press the red flashing button now. Deliver shock now.
11:35:34 Shock Button pressed.
11:35:35 Prompt : Shock delivered.(E: 184.6 J BI: 47 ohm # of Shock: 1)
11:35:36 Prompt : It is safe to touch the patient.
11:35:41 Prompt : Begin CPR.

Figure 15. Editing or deleting the annotation – Event tree

D. General

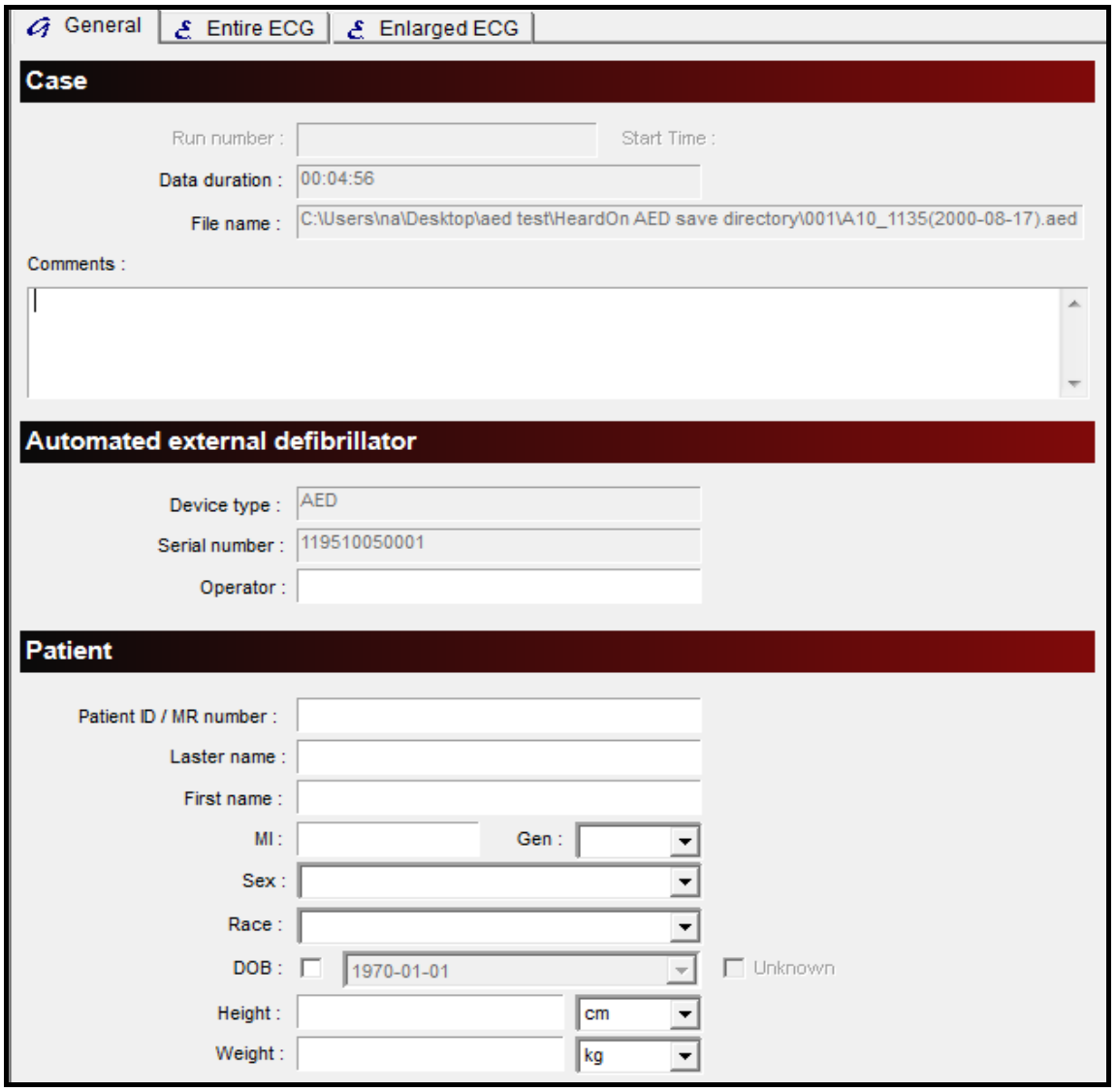


Figure 16. General window

The General window is to save the additional data generated by using the AED.

It consists of three major functions.
Case: It is used to display the selected case information.
Automated external defibrillator: It is used to display the AED information.
Patient: It is used to display the patient information.

If necessary, you can input data into the blank spaces of the General window and save it. These data is available later.

E. Entire ECG

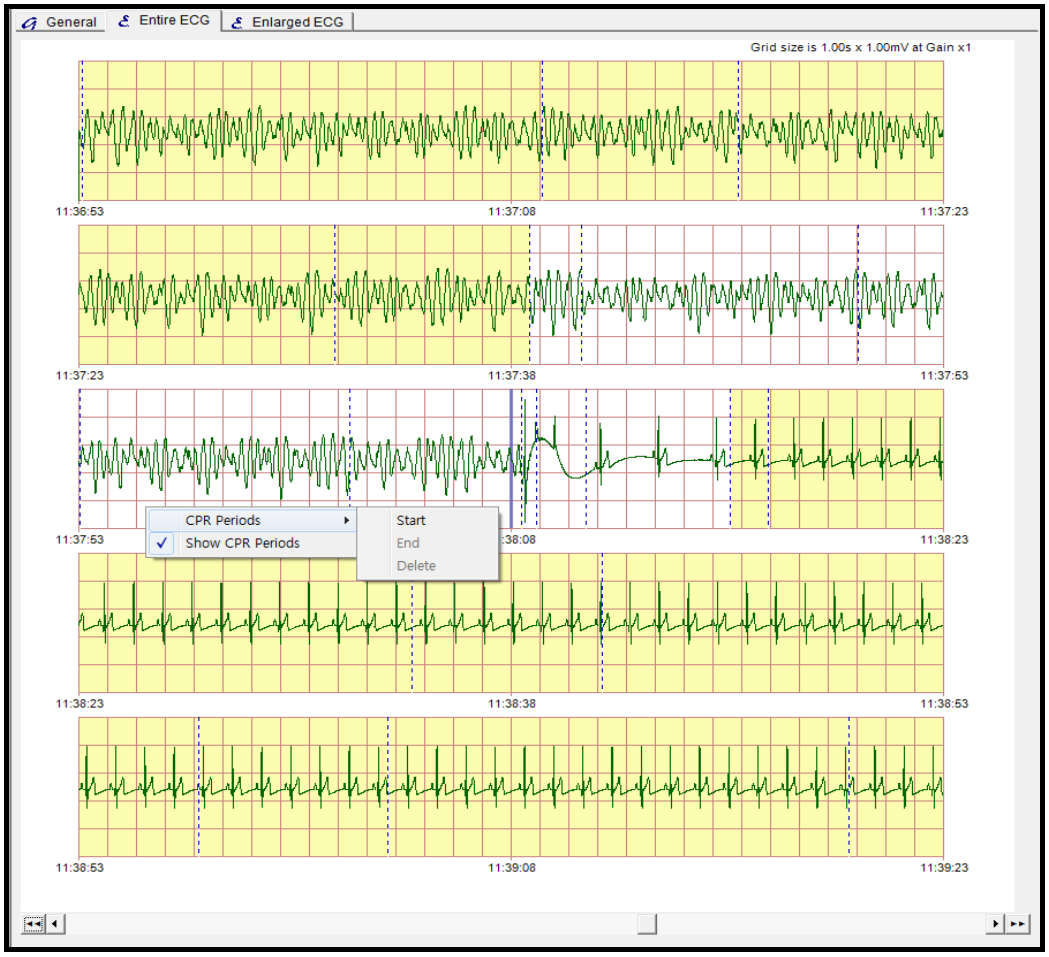


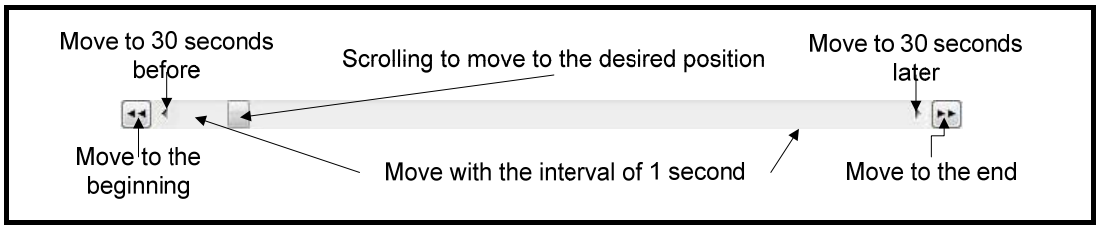
Figure 17. Entire ECG window

The Entire ECG window is to view the entire ECG data flow saved in the AED.
The ECG data during 2 minutes and 30 seconds are displayed with the interval 30 seconds and the event points are marked on the display. The CPR periods can be set and indicated.

The setting menu for CPR periods is available by right-clicking the specified point. The CPR periods can be set, deleted, displayed or hidden via this menu.

NOTE: The CPR periods can be operated on the HeartOn AED Event Review Software but it cannot be saved. The initial CPR periods is specified by the AED.

Use the below scroll bar to show data on the desired point.


Move to 30 seconds before
Scrolling to move to the desired position
Move to 30 seconds later
Move to the beginning
Move with the interval of 1 second
Move to the end

F. Enlarged ECG

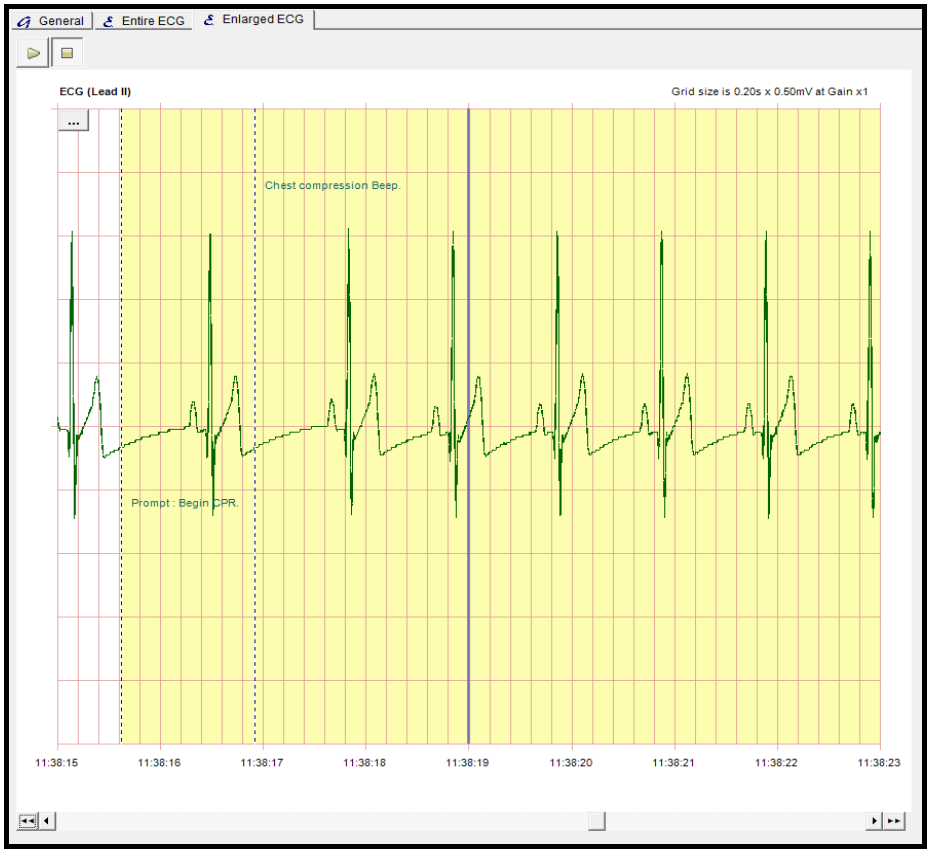
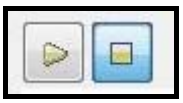
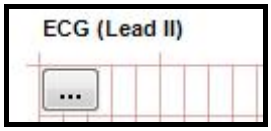


Figure 18. Enlarged ECG window

The enlarged ECG window is to view the ECG data and event data of the AED enlarged with the time unit.



It plays or stops all procedures by pressing ‘Play’ or ‘Stop’ buttons located at the top of the window.



The display setting button is located under the ‘Play’ and ‘Stop’ button.
The display setting button is used to set three menus below.

- Display 6sec View: It is used to display the 6 seconds view of enlarged ECG. (The default of enlarged ECG display is the 8 seconds view.)
- Display Large View: It is used to display the 2 seconds view of enlarged ECG.
- Display Event Text: It is used to display or hide the event text. The default setting is to display the event text.

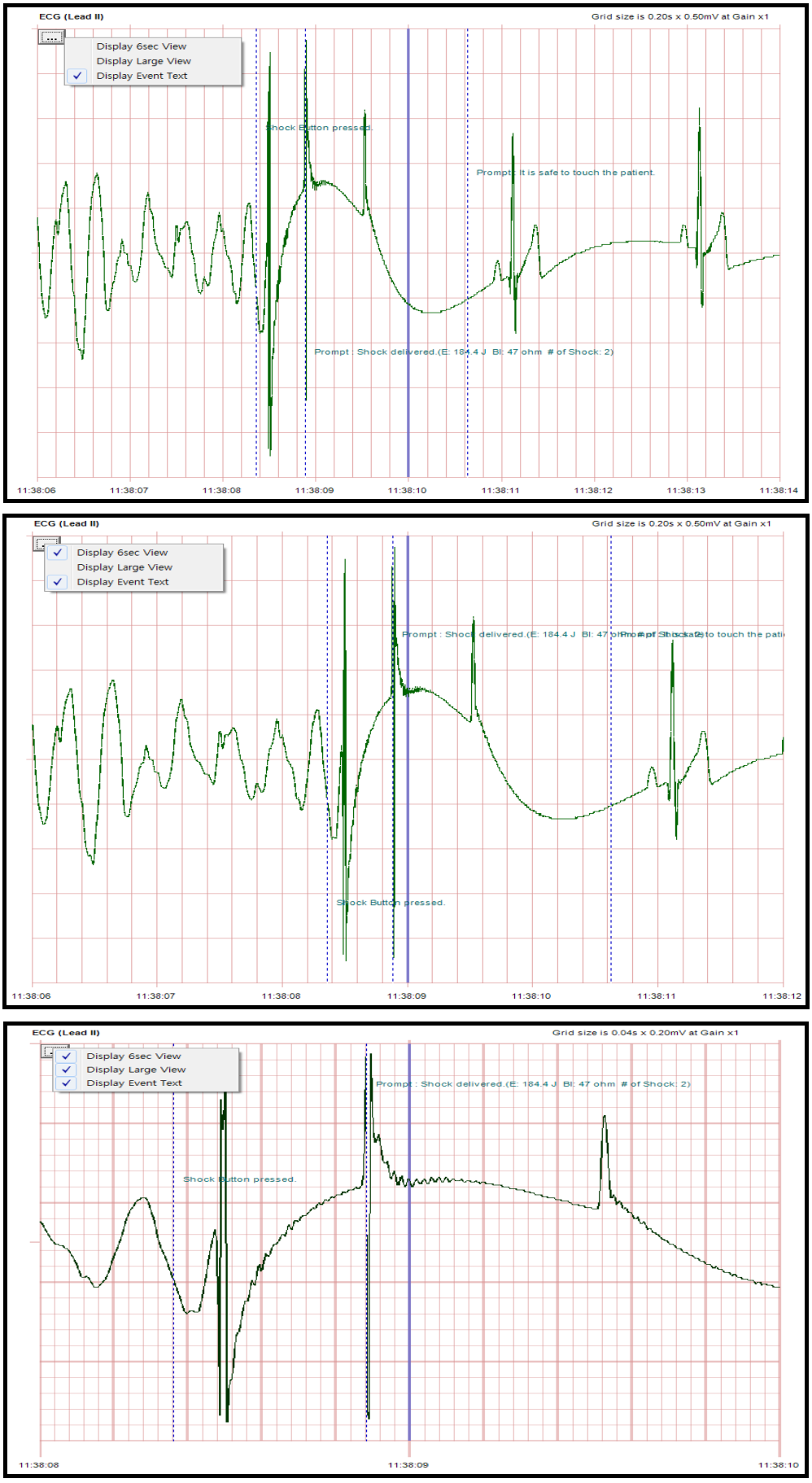


Figure 19. Display setting of the enlarged ECG

The display setting menu is available by right-clicking the enlarged ECG display.

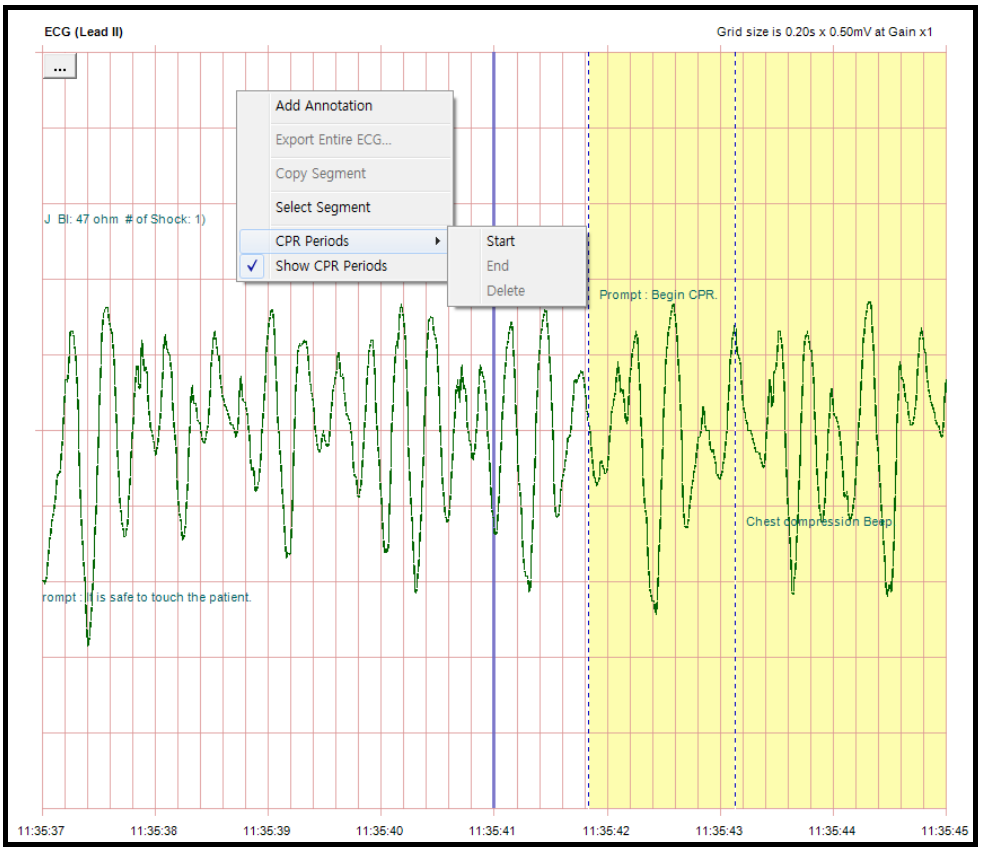


Figure 20. Setting the enlarged ECG menu

- Add Annotation: It is used to add the annotation for the specified time.
  (The specified time is not selectable unlike event tree.)

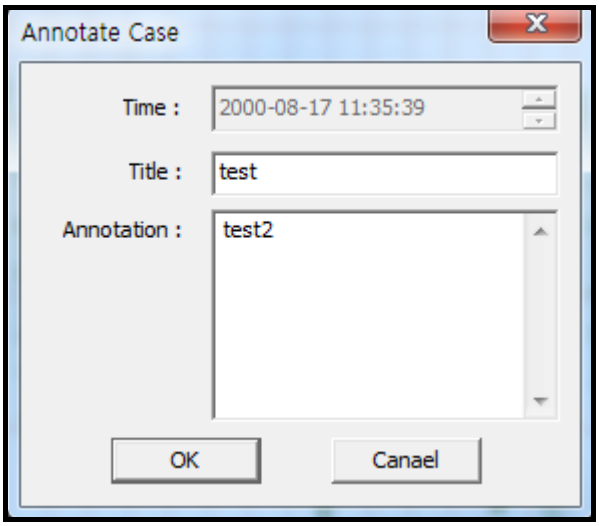


Figure 21. Adding the annotation – Enlarged ECG

- Export Entire ECG: For future use.
- Copy Segment: For future use.
- Segment: It is a part of entire AED data.

It can be set or deleted like the CPR periods but not be saved.
It is used to print the ECG wave form.

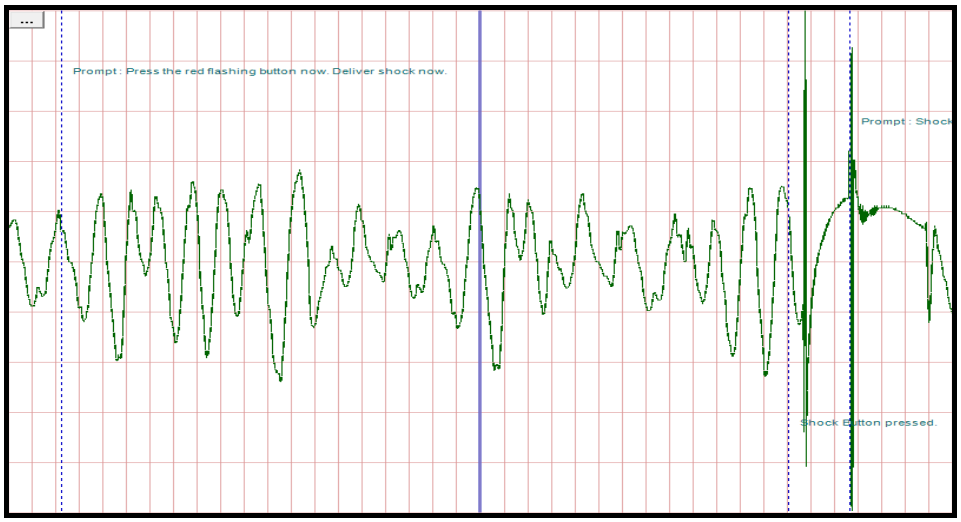


Figure 22. Basic enlarged ECG display

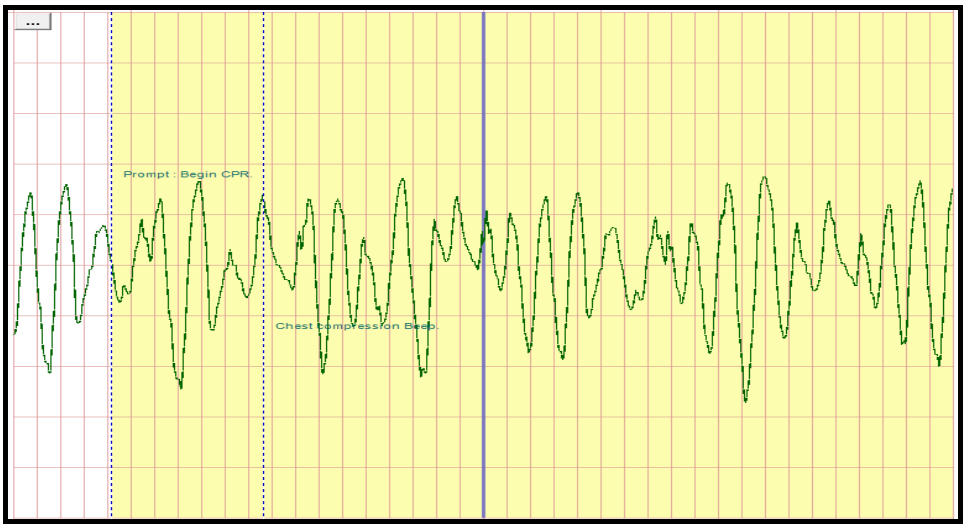


Figure 23. CPR display of enlarged ECG

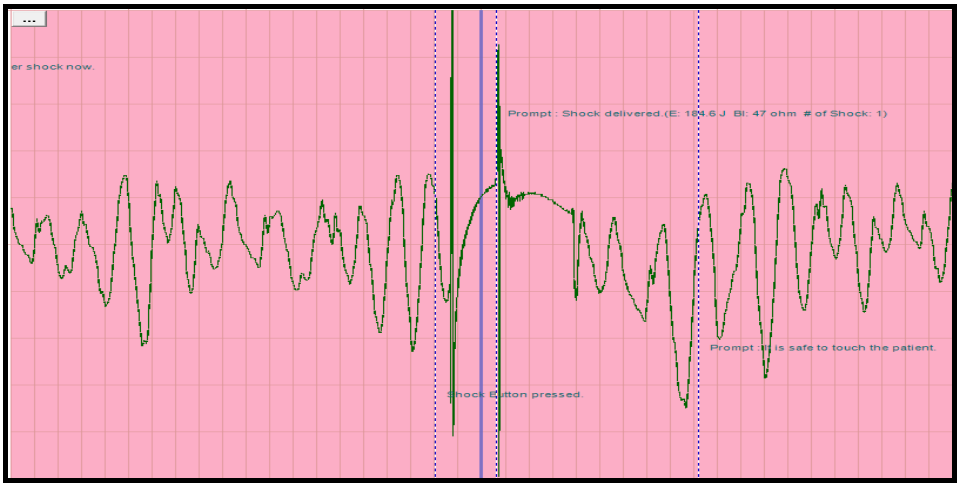

...
er shock now.
Prompt : Shock delivered.(E: 184.6 J Bl: 47 ohm # of Shock: 1)
Prompt : It is safe to touch the patient.
Shock Button pressed.

Figure 24. Segment display of the enlarged ECG

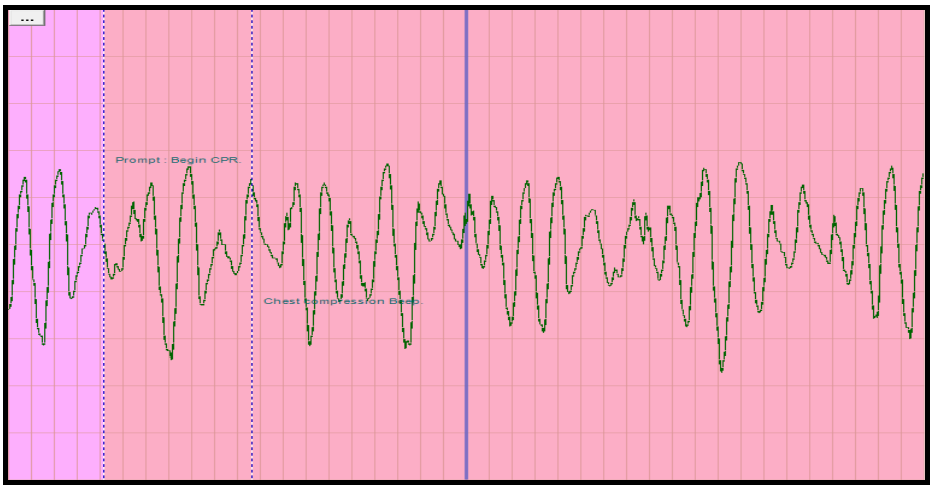


Figure 25. Combination display for CPR & Segment of the enlarged ECG

G. Incident Log & Print

i. Incident Log

The incident log is to view the all data of the specified case except for ECG waveform on the web browser. It supports all functions – save, print, or etc. - provided based on the web browser.

NOTE: If the incident log data is not saved when displayed on Internet Explorer, it is available only via the HeartOn AED Event Review Software.

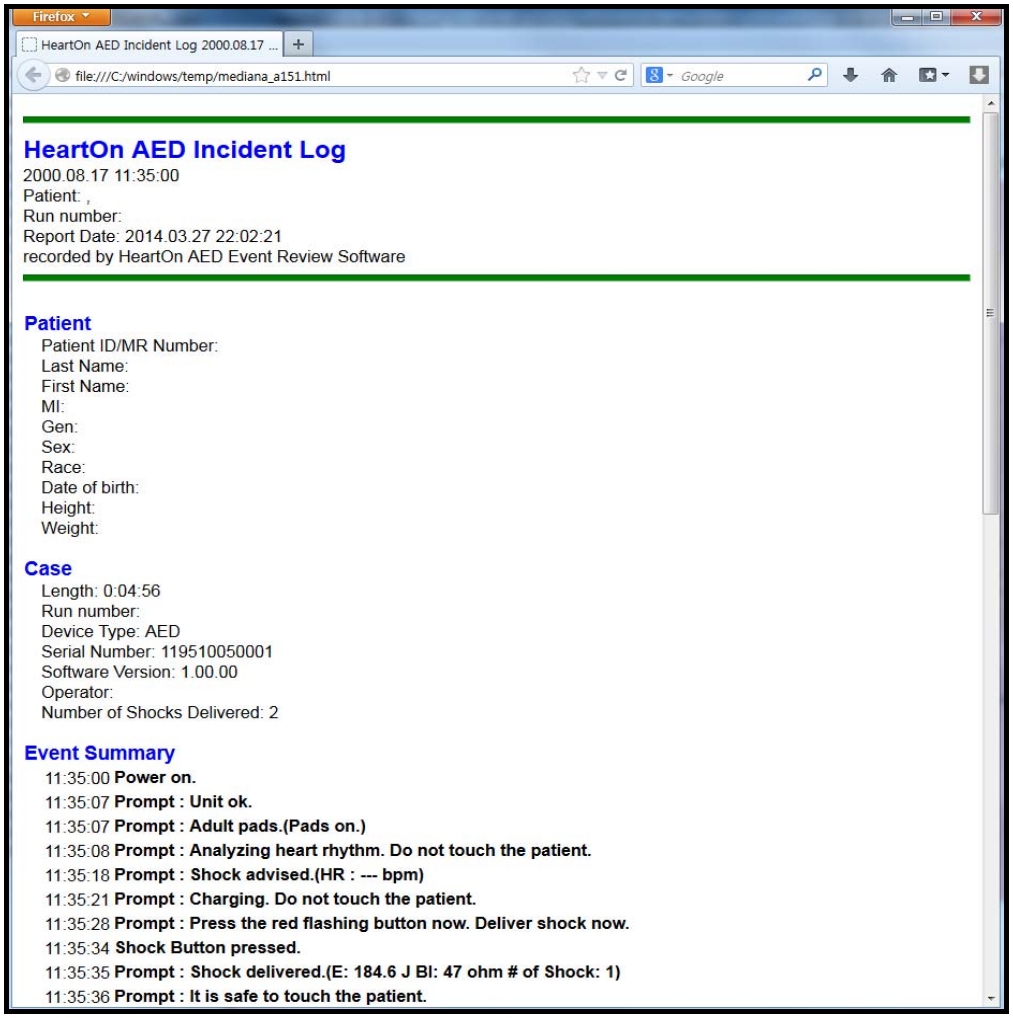


Figure 26. Incident log window

ii. Print

The print function provides only for the segment selected from the enlarged ECG. The segment is printed out with interval of 10 seconds, and it includes the ECG data and event data.

NOTE: The printing resolution should be set to 600dpi. If the resolution is not proper, it would cause the abnormal printing.

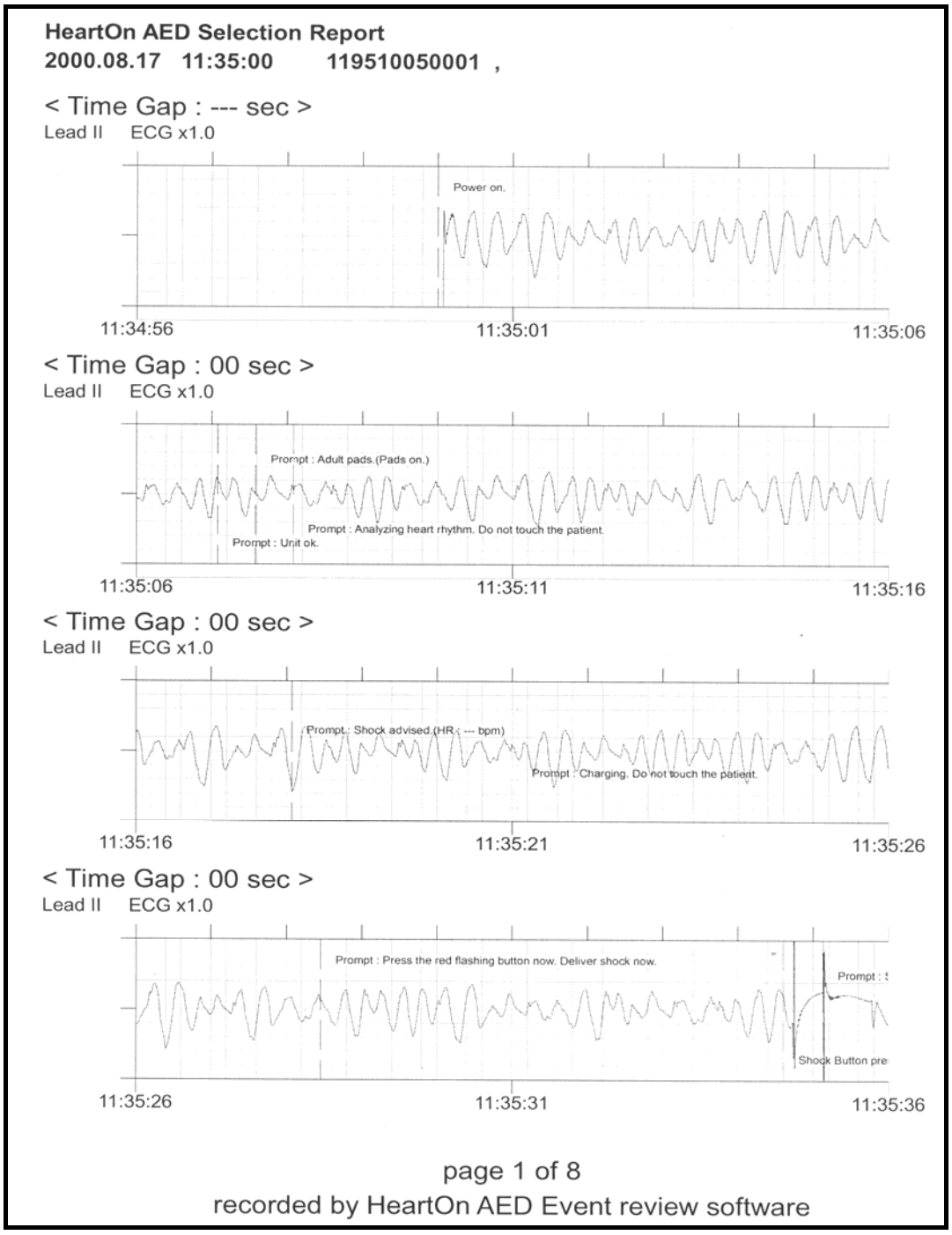


Figure 27. Printing